WHAT IS CLAIMED IS:

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1.   A multiple decoding apparatus receiving a signal composed of a plurality of encoded data for simultaneously decoding two or more of the data, comprising:

a reproduction controller for outputting various types of
5   control information related to decoding and reproduction of the data;

a data extractor receiving said signal for extracting the two or more data designated by said control information;

a buffer storing the data extracted by said data extractor;
10   a buffer manager for controlling said buffer in accordance with said control information for said buffer;

a data flow controller for distributing the data stored in said buffer for each type and transferring the data in accordance with provided transfer conditions;

15   a plurality of separate buffers for respectively storing the data distributed and transferred by said data flow controller;

a separate buffer manager for respectively controlling said separate buffers in accordance with information related to the specification of said separate buffer;

20   a plurality of decoders respectively corresponding to said plurality of separate buffers for decoding the data stored in said separate buffers and outputting the decoded data; and

a decoding controller for selecting said separate buffer

and said decoder which are used for the decoding in accordance

25   with said control information, and outputting information related

to the selected separate buffer, said transfer conditions based

on the selected separate buffer, and an instruction to start the

decoding, respectively, to said separate buffer manager, said

data flow controller, and said selected decoder.

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2.   The multiple decoding apparatus according to claim 1,

wherein

said buffer manager outputs, when said buffer becomes full of

the data, an overflow notification to said reproduction controller,

5   said reproduction controller outputs, upon receipt of said

overflow notification, an instruction to stop the data extraction

to said data extractor, and outputs an initialization instruction

to said decoding controller;

said decoding controller outputs, upon receipt of the

10   initialization instruction from said reproduction controller, an

instruction to initialize all said plurality of separate buffers to

said separate buffer manager, outputs to said buffer manager an

instruction to initialize said buffer, and respectively outputs

instructions to stop the decoding to all said plurality of decoders,

15   said buffer manager initializes said buffer in accordance with

the initialization instruction from said decoding controller,

said separate buffer manager initializes all said plurality

of separate buffers in accordance with the initialization instruction

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from said decoding controller, and

20   all the processing which is stopped is resumed after all said

buffer and said plurality of separate buffers are initialized.

        3.   The multiple decoding apparatus according to claim 1,

wherein

        said separate buffer manager outputs, when the specific

separate buffer becomes full of the data, an overflow notification

5   that the specific separate buffer overflows to said decoding

controller,

        said decoding controller outputs, upon receipt of the

overflow notification that said specific separate buffer

overflows, an instruction to stop the data transfer to the

10   specific separate buffer to said data flow controller, outputs

an instruction to stop the decoding to said decoder corresponding

to the specific separate buffer, and outputs to said separate

buffer manager an instruction to initialize the specific separate

buffer,

15   said separate buffer manager initializes said specific

separate buffer in accordance with the initialization instruction

from said decoding controller, and

        all the processing which is stopped is resumed after said

specific separate buffer is initialized.

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        4.   The multiple decoding apparatus according to claim 1,

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wherein

said separate buffer manager outputs, when the specific separate buffer becomes full of the data, an overflow notification

5 that the specific separate buffer overflows to said decoding controller,

said decoding controller outputs, upon receipt of the overflow notification that said specific separate buffer overflows, an instruction to discard the data directed toward the specific separate

10 buffer to said data flow controller, outputs an instruction to stop the decoding to said decoder corresponding to the specific separate buffer, and outputs an instruction to initialize the specific separate buffer to said separate buffer manager,

said separate buffer manager initializes said specific

15 separate buffer in accordance with the initialization instruction from said decoding controller, and

all the processing which is stopped is resumed, and the discard of said data is released after said specific separate buffer is initialized.

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5. A multiple decoding method, in which a signal composed of a plurality of encoded data is inputted, to simultaneously decode two or more of the data, comprising the steps of:

inputting said signal and extracting the two or more data

5 to be decoded and reproduced;

storing said extracted data in a buffer;

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distributing the data stored in said buffer for each type and respectively storing the data in the plurality of separate buffers; and

10   respectively decoding the data stored in said plurality of separate buffers and outputting the decoded data.

6.   The multiple decoding method according to claim 5, further comprising, when said buffer becomes full of the data, the steps of

stopping extraction and decoding of the data,

initializing all said buffer and said plurality of separate

5   buffers, and

resuming all the processing which is stopped after all said buffer and said plurality of separate buffers are initialized.

7.   The multiple decoding method according to claim 5, further comprising, when the specific separate buffer becomes full of the data, the steps of

stopping the distribution of the data into said specific

5   separate buffer and the decoding of the data stored in the specific separate buffer,

initializing said specific separate buffer; and

resuming all the processing which is stopped after said specific separate buffer is initialized.

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8.   The multiple decoding method according to claim 5,

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further comprising,

when the specific separate buffer becomes full of the data, the steps of

5   discarding the data directed toward said specific separate buffer,

stopping the decoding of the data stored in said specific separate buffer,

initializing said specific separate buffer, and

10   resuming all the processing which is stopped after said specific separate buffer is initialized, and releasing the discard of said data.